

In the Claims:

Claims 1-7 (cancelled)

8. (currently amended) A method of separating particles from a fluid stream comprising:

passing the fluid with particles into an inlet of a cyclone filter;

passing the fluid with particles through a distribution channel formed between an outside radius of a ring and a larger radius of a cylindrical chamber;

passing the fluid with particles through a plurality of grooves in the ring;

spiraling the fluid with particles down a downflow annulus formed between a vortex finder tube and an intermediate tube;

providing a collection chamber having a cylindrical upper portion and a frustoconical lower portion;

removing the particles from the fluid by contacting the fluid with particles with a deflector located within the cylindrical upper portion of the collection chamber, the fluid reversing direction upon contact with the deflector;

collecting the particles in the lower ~~cylindrical~~ frustoconical portion of the collection chamber; and

expelling the fluid through a fluid outlet at an upper end of the vortex finder tube.

9. (original) The method of claim 8 further comprising:

removing the particles via an outlet located at a bottom end of the frustoconical lower portion of the collection chamber.

Claims 10-16 (canceled)

17. (original) A method of separating particles from a fluid stream comprising:

passing the fluid with particles into an inlet of a cyclone filter;

passing the fluid with particles through a distribution channel formed between an outside radius of a ring and a larger radius of a cylindrical chamber;

passing the fluid with particles through a plurality of grooves in the ring;

spiraling the fluid with particles down a downflow annulus formed between a skirt and an upper cylindrical end of a collection chamber;

spiraling the fluid with particles through the downflow annulus into a lower frustoconical end of a collection chamber;

removing the particles from the fluid by reversing the direction of the fluid via a low pressure of a vortex;

collecting the particles in the lower cylindrical portion of the collection chamber; and

expelling the fluid through a fluid outlet at an upper end of the skirt.

Claims 18-22 (canceled)

23. (original) A method of separating particles from a fluid stream comprising:

passing the fluid with particles into an inlet of a cyclone filter;

passing the fluid with particles through a distribution channel formed between an outside radius of a ring and a larger radius of an upper cylindrical portion of a collection chamber;

passing the fluid with particles through a plurality of grooves in the ring;

spiraling the fluid with particles down a downflow annulus formed between a skirt and an upper cylindrical end of a collection chamber;

spiraling the fluid with particles through the downflow annulus into a lower frustoconical end of a collection chamber;

removing the particles from the fluid by reversing the direction of the fluid via a negative pressure of a vortex;

collecting the particles in the lower cylindrical portion of the collection chamber; and expelling the fluid through a fluid outlet at an upper end of the skirt.

Claims 24-37 (cancelled)

38. (new) The method of claim 9 wherein the step of removing further comprises allowing the particles to accelerate outward upon contact with the deflector.

39. (new) The method of claim 38 wherein the fluid is injected at an increased velocity into the downflow annulus.

40. (new) The method of claim 17 further comprising providing a cyclone filter having six grooves.

41. (new) The method of claim 23 further comprising providing a cyclone filter having six grooves.

42. (new) A method of separating particles from a fluid stream comprising:
passing the fluid with particles into an inlet of a cyclone filter;
passing the fluid with particles through a distribution channel formed between an outside radius of a ring and a larger radius of a cylindrical chamber;
passing the fluid with particles through a plurality of grooves in the ring;
spiraling the fluid with particles down a downflow annulus formed between a first tube and a second tube;
removing the particles from the fluid by reversing the direction of the fluid;
collecting the particles in a collection chamber; and
expelling the fluid through a fluid outlet at an upper end of the first tube.

43. (new) The method of claim 42 wherein the step of spiraling the fluid with particles down a downflow annulus further includes forming the downflow annulus between the first tube, being a vortex finder tube, and the second tube, being an intermediate tube.

44. (new) The method of claim 43 wherein the step of removing the particles by reversing the direction of the fluid further comprises contacting the fluid with particles with a deflector located within the collection chamber, the fluid reversing direction upon contact with the deflector.

45. (new) The method of claim 44 wherein the step of expelling the fluid further comprises expelling the fluid through an upper end of a vortex finder tube.

46. (new) The method of claim 42 wherein the step of proving the collection chamber further comprises proving a collection chamber having a cylindrical upper portion and a substantially frustoconical lower portion.

47. (new) The method of claim 46 further comprising collecting the particles in the lower frustoconical portion of the collection chamber.

48. (new) The method of claim 46 further comprising removing the particles via an outlet located at a bottom end of the frustoconical lower portion of the collection chamber.

49. (new) The method of claim 42 wherein the step of spiraling the fluid with the particles down a downflow annulus further comprises spiraling the fluid with the particles down a downflow annulus formed between the first tube, being a skirt, and the second tube, being an upper cylindrical end of the collection chamber.

50. (new) The method of claim 49 wherein the expelling the fluid includes expelling the fluid through the fluid outlet at an upper end of the skirt.

51. (new) The method of claim 50 wherein the step of removing the particles further comprises reversing the direction of the fluid via a low pressure of a vortex.

52. (new) The method of claim 51 wherein the step of removing the particles further comprise reversing the direction of the fluid via a negative pressure of a vortex.

53. (new) The method of claim 52 in which the step of passing the fluid with particles through a distribution channel further comprises forming the distribution channel between the outside radius of the ring and the larger radius of a cylindrical chamber, being an upper cylindrical portion of the collection chamber.